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with a pile of that material, which he raised in the air. In this singular condition he made the greatest possible display of himself in front of the copperhead, as though to intimidate him. He maintained the inflation for two days, or until the copperhead was removed, as if aware that a bite into a bag of wind would be almost innocuous. The copperhead acted as though master of the situation, but could not be persuaded to bite, though considerably irritated.—*E. D. Cope.*

ANTHROPOLOGY.¹

CHILD GROWTH. — It is a matter of almost daily notice that the children about us are changing, growing, yet of the laws governing this growth, we think but little, if, indeed, we give them any thought.

If the body develops normally it receives but little attention and no study from mothers. To the mind we give more heed, although even that receives but a small amount of care until the child has advanced far on the pathway of knowledge.

There are laws governing the growth of body and mind which go hand-in-hand, and which should be known to, and studied by, every custodian of children, be it as parent, teacher or guardian. No need to leave our homes, families or schools to study these laws, for right there is the veiled Isis whose study will lead us to higher planes, where, if we would work with half the zeal displayed in the merely ornamental, we could make contributions of true value to anthropology, as well as secure to ourselves and children knowledge of priceless value. This mine of wealth is our children, the beloved of our hearts, the treasures of our lives.

It is the systematic study of their growth, physical and mental, that I hope we may undertake together.

The study of my little daughter began in 1881, shortly after her birth, when, looking at her tiny hand with the wondering love of a mother over her first born, I outlined the rosy palm with pencil and paper, adding a lock of the silky fuzz, not so much to show the character of the hair, perhaps, but because the drawing looked rather naked. Imagine my surprise later to find just such an outline for scientific measurement; also, to learn the great importance of the color and quality of the hair. (Professor Huxley, in his *Anatomy of the Vertebrate Animals*, divides his races of mankind into two primary divisions, according to the quality of the hair, viz: The *Ulotrichi* with crisp and woolly hair, and the *Liotrichi* with smooth hair.) I then added the weight at birth, then the time of her first smile, in short, the record grew until I have a journal which has much in common with the study of anthropology.

Every thinker admits that in the human, as well as other ani-

¹ Edited by Prof. OTIS T. MASON, National Museum, Washington, D. C.

mals, are hereditary virtues as well as vices. Children with suicidal tendencies entirely prenatal, others with thievish propensities given before birth. Then, too, we find the sons and daughters of pure and upright parents with noble souls and lofty aims. If we had a record of ourselves, thereby affording us a knowledge of our hereditary tendencies, could we not more intelligently meet, or perhaps anticipate, the needs of our children, more readily counteract evil propensities and recognize the good?

We do not realize the value of this work, nor yet the great advantages we have to collect data.

Scientists have worked hard, under most trying circumstances, to create an interest in this kind of work as well as to collect data for statistics. Francis Galton, known the world over as a leading anthropologist, prepared a set of cards and hired men to go about England paying people a small sum for each child they would allow them to weigh, measure, take age, color of hair, eyes, etc., that he might get statistics for race characteristics. Fröbel (that mind which saw the needs of childhood and has been such a blessed help to mothers and children) advised mothers to keep a record of the growth of their children.

This record is not a difficult task, and can be best kept in the quiet of home life. It consists of gathering and recording the little daily incidents, surroundings, tendencies, games, pleasures, sorrows and sicknesses of ourselves and children; also the height, weight, color of hair and eyes, strength of sight, hearing, also resemblances. The food on which the child is fed, frequency of meals, at what age did child exhibit consciousness, as notice the prick of a pin, follow a light with its eyes; at what age did it walk, talk, and what words did it use. Then, as the child grows older, to name the character of its play, amount of exercise, of memory, imagination.

The height should be taken with bare feet, standing against the wall, laying a carpenter's square across the head and marking, then measuring with an ordinary tape measure. In the case of an infant, lay it on the back, stand a square against head and feet, and measure distance between.

The sight is tested by reading type of different sizes at given distances; hearing by the distance in feet the ticking of a watch can be heard; knowledge of colors by a few skeins of worsted.

Older countries appreciate the value of these researches more than Americans, hence we find in England and France more systematic effort in that direction. In this connection I would not be understood as undervaluing the work of American scientists, noticeably the researches of Dr. Bowditch, professor of physiology of Harvard Medical College; also of Dr. Peckham, teacher of biology of the High School of Milwaukee, Wis., whose articles, entitled "The Growth of Children," are quoted as standard authorities, particularly in England. The only public

effort in our country to collect such records, that I have been able to find, is a circular issued in 1881 by the Education Department of the American Social Science Association, which contained a short register for the physical and mental growth of children, requesting parents to send them a duplicate. As I could find no circular since that of 1882, I wrote to the secretary, Mrs. Emily Talbot, of Boston, to know if they continued the work, to which she replied under date of January 4th, 1886: "The Social Science Association only pointed to the open door, hoping and expecting that the right sort of a scientific enthusiast would sometime enter in."

The British Medical Association has a Collective Investigation Committee, whose object it is to collect such data as any mother can furnish. In France the measuring and weighing of babies is a matter of such common practice that in shops devoted to babies' wares and wardrobes, one always finds weighing machines, which are regarded as a necessary part of every baby's outfit. Lothrop, and Lee & Shephard, of Boston, each publish books for mothers to keep registers of their children's growth. Dr. Elizabeth Stow Brown, of the New York Infant Asylum, who has seventy children under her care, is recording their development.

What may we learn from these facts?

First. That there is a need in the world of such information.

Second. That women are best fitted to collect this valuable material.

Third. That fathers and mothers stand ready to do the work systematically, asking only a guiding hand.

Since the above article was read the Woman's Anthropological Society has decided to begin the work above described, and, in the main, to adopt the system used by the Collective Investigation Committee of the British Medical Association, who publish a book with the questions to be answered, giving full directions for taking measurements, weights, testing sight and hearing. These books are to be kept in duplicate by the parents, and every year the duplicate to be sent to the society to become a part of their records, thus furnishing material of priceless value for scientific study, and securing to the parents and child a systematic record, both valuable and interesting.

There are many who have thought of this kind of work and are, perhaps, keeping records, who are unknown to us. From such we cordially invite suggestions, and where our object is not plain, it will give us pleasure to answer questions. The success of this work depends largely upon the interest taken by mothers, and as there is no doubt of the need of such work at their hands, we must earnestly request them to communicate with us.

Let not the fact that you did not begin in infancy of your children deter you. Let their age be what it may, the record will be valuable.

All correspondence should be addressed: The Corresponding Secretary, Woman's Anthropological Society, Washington, D. C.

PARTIAL LIST OF QUESTIONS. (To appear later in book form.)

1. Give full name.
2. Previous health of mother whether under any especial mental or physical stimulus, as fright or sickness?
3. Physical peculiarities (if any, as "mother's marks")?
4. Weight (naked)?
5. Color of hair?
6. Healthy or ailing?
7. Good-natured or fretful?
8. At what age did the child exhibit consciousness, or pain?
9. Follow a light with its eyes?
10. Sit alone?
11. Creep?
12. Walk?
13. Speak, and what did it say?
14. Character of food?
15. Give average number of hours of sleep in twenty-four hours.
16. State diseases, if any.
17. At what age did child enter school?
18. Amount and character of exercise.
19. Sports.
20. Playthings.
21. Mention any marked artistic capacity.
22. State of memory, retentive or unreliable?

—Clara Bliss Hinds.

SKULL OF ADULT WITH FRONTAL SUTURE.—The following description of a cranium presenting some unusual and abnormal features may be considered not unworthy of record. It is the skull of a white man of about forty years of age, and was found four years ago by a member of my family, a young medical student, on the north-west coast of Lake Erie, where the body had originally been washed ashore and had been buried; the action of the waves during storms having finally unearthed the bones, the greater part of the skeleton was recovered. Diligent inquiry failed to disclose any information in regard to the unknown individual's nationality or history. It is possible he may have been lost overboard from some passing vessel. Nothing peculiar as to his person was noticed by those who buried him.

The dimensions of the cranium, here given, are expressed in inches and decimals of an inch: Circumference, 20.82; length, 7.43; breadth, 5.60; height, 4.83; breadth of frontal, 5.13; frontal arch, 12.25; parietal arch, 12.80; occipital arch, 11.12; longitudinal arch, 14.72; length of frontal, 5.35; length of parietal, 5.25; length of occipital, 4.12. The latitudinal index is .753, which would place it in the medium or mesaticephalic division. The altitudinal index is .650, while the position of the foramen magnum affords an index of .480.

One of the peculiar characteristics of the skull is the presence of a frontal suture. This suture, as is well known, is usually obliterated in the adult, the frontal bone forming one piece. In

the case before us it is well marked and fully developed throughout, dividing the frontal bone into two lateral halves. The serræ or dentations are quite abundant for the greater part of the suture, and are particularly frequent in the upper portion. The coronal suture in the vicinity of the anterior fontanelle remains unclosed, permitting a slight movement of the frontal bone.

On the sagittal suture, at its junction with the coronal suture (near the position of the anterior fontanelle), occurs a wormian bone of quadrilateral form, .65 of an inch long, by .2 of an inch wide. Back of this the entire sagittal suture is completely closed and obliterated, with the exception of a slight indication of its existence for about one-quarter of an inch at its junction with the lambdoid suture; a shallow wavering depression along the rest of its former course being all that remains to mark its position.

In the lambdoid suture, which is deeply indented, five wormian bones are present. With the exception of one of them, which is triangular in shape, situated at the summit of the occipital bone, they are, like that on the sagittal suture, quadrilateral in form. The largest of these is .75 by .57 of an inch; the smallest is .6 by .3 of an inch. The former presents the curious feature of two or more wormian bones within a wormian bone. Usually wormian bones are of triangular form, which gives them the name by which they are also called, viz: *Ossa triquetra*, or, *triangularia*. In the wormian bone on the sagittal suture, the long diameter is with the general direction of the suture; but those bones in the lambdoid suture have the long diameter at right angles to the direction of the suture.

Though the skull is small, it is heavy for its size; and the structure of the bones is solid, massive and unyielding. This is the more worthy of remark from certain indications which would seem to point to defective or abortive ossification. The occlusion and obliteration of the sagittal suture would appear to have found compensation or relief in the permanent establishment of the frontal suture; and also in the remaining open of that part of the coronal suture in the neighborhood of the anterior fontanelle. The occurrence of the wormian bones is also corroborative of defective ossification, the membranous intervals left in the process of growth being filled in by these supernumerary bones, developed from separate centers.

While the coronal region is not only flat, but slightly depressed, the forehead is straight, and the frontal eminences, though not especially prominent, are well developed, as is also the superciliary ridge, the glabella being distinct. The occipital protuberance is a decidedly pronounced feature. Some of these facts point to a similar origin.

The remaining bones appear to be well made and of fair shape. The femur, tibia, humerus, etc., are finely proportioned and of strong build, though the man was of short height. The stature,

as obtained by me by computation from the length of the femur, using Humphrey's method, is 5 feet 3½ inches.

Owing to the absence of the maxillaries, the nasal and malar bones, and the zygomatic arches, I was prevented making several interesting and important measurements.

In this connection it may be well to remark that synostosis is not always productive of deformity, and that the age at which the lesion occurs has much to do with the gravity and character of the result.—*Henry Gillman, Detroit, Michigan.*

THE BATEKES.—A small but exceedingly rare collection brought to the National Museum by Mr. Tisdell, makes the paper of M. Guiral doubly interesting. In Stanley's "Congo" will be found a map locating this interesting people. The Batékés are an agricultural people, locating their villages near water-courses, upon fertile areas, surrounded by sandy wastes. Their crops are palms, manioc, arachids, millet and maize. M. Guiral speaks with pathetic eloquence of the discomforts of smoke and vermin in these palm-leaf habitations.

The Batékés are tall and meager, and very dark; eyes bright and mobile, voices weak but supple. Their clothing is a short petticoat, or a breech clout. They wear the hair short and plaited in little braids, following each his own design. They adorn the hair with feathers and beads. They grease their bodies with palm oil and chip their front teeth.

The women are the farmers, and perform their work with a simple hoe of native manufacture. For domestic animals they have goats, chickens, pigs and dogs. The music of the Batékés consists of a gourd rattle; a calabash pierced with an opening in which to blow at the same time that the object is struck with the hands; a kind of fife, three-stringed guitar, castanets, a tambour made of hollow wood covered with goat skin, and a species of zither formed like a bow and arrow. In the last-named instrument a bow has two strings of different lengths attached to an arrow shaft. Instead of a point the arrow has a broad disk for a head, which the player places against his breast. By drawing the bow towards him the player has virtually four strings, which he can tighten *ad libitum*.—*Leon Guiral, Rev. d'Ethnog.*, v, 135-166; also see *id.* iv, 160-168, and iii, 550-555.

THE NICOBARESE.—The inhabitants of the Nicobar islands consist of two races, the natives of the interior, of pure descent (with certain Mongolian affinities), isolated from a remote period; and the natives of the coast, exhibiting all the characteristics of a mongrel Malay race. The inland people are known to the coast tribes as Shom Peir (*Shom*, people, and *Peir*, the tribe designated). They are fairer than the Malays and straight-haired. The coast inhabitants show an admixture of Burmese and Siamese blood, the former through regular traffic, the latter through wrecks cast

ashore. A very interesting invention for recording the number of days, etc., is that of bending back a strip of bamboo until the requisite number of cracks were made on the surface. The coast people chew the betel until the teeth become coated with a thick, hard mass, protruding from the gums so as to make it impossible for the lips to meet.

The Shom Peir boil their food in pots or sacks made of bark from three varieties of trees.—*E. H. Man, J. Anthropol. Inst.*, xv, 428-451.

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SCIENTIFIC NEWS.¹

—As we have been asked for the best cement for use in making aquaria, we extract from the *English Mechanic* the following receipt: "This glue is employed where the materials are exposed to the influence of wet. It cements not only wood, but glass and metals. It is made by dissolving, by heat, one part of pure india-rubber in naphtha, the india-rubber being cut very small. When melted, two parts of shellac are added, and the melting continued until the whole is well mixed by occasional stirring or shaking. While hot, it is poured on metal plates to cool. Before using, it requires to be liquefied by heat, and quickly applied with a brush, as it soon hardens."

—The first number of a new German fortnightly journal of anatomy, entitled *Anatomischer Anzeiger, Centralblatt für die gesamte wissenschaftliche Anatomie*, appeared June 1st, 1886. It is edited by Professor Karl Bardeleben, of Jena, and is published by Gustav Fischer. Besides short articles and abstracts of longer ones, it gives the titles of new papers and works on anatomy with technological notes and personal news. The price for 1886 is six marks.

—Professor H. Fol and E. Sarasin read a paper before the French Academy of Sciences, May 3d, on the penetration of light into deep sea-water. From their experiments, reports *Nature*, it appears that layers at a depth of 300 meters are illumined every day for the whole time that the sun remains above the horizon. At 350 meters light penetrates for at least eight hours daily. Even after sunset the actinic rays seem to reach considerable depths.

—A late number of the *Investia*, of the Russian Geographical Society, contains a letter from M. Prjevalsky, dated Lob-na, January 29th, 1885, in which he announces the discovery, in the vicinity of Has, of a new species of sheep, which he calls *Ovis datailamæ*. At Lob-nor he was to spend the month of February in studying the migrations of birds.

¹ Edited by WM. HOSEA BALLOU, 265 Broadway, N. Y.